



Palaeoenvironmental evolution at Plio-Pleistocene Hominin sites in Western Kenya: Preliminary results

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This research uses a multiproxy approach to create detailed reconstructions of Plio-Pleistocene hominin landscapes and environments on the Homa Peninsula, western Kenya. Sedimentary sequences associated with this time period, containing hominin archaeological traces and faunal remains, are studied using analyses of particle size, phytoliths and lipid biomarkers. Reconstructing the palaeoenvironmental substrate here is critical in developing an understanding of the activity and behaviour of previous hominin inhabitants.

Three archaeological sites exist in the region that form the bases of this research; these include Kanjera South, Nyayanga and Sare River. Research at Kanjera began in the early 20th century, but systematic investigation of the artefact and faunal assemblages of the southern exposures (Kanjera South), dating to ca. 2 Ma, did not begin until 1995. Field investigations and isotopic analyses of palaeosol carbonate nodules and fauna suggested that Kanjera South sediments were deposited in alluvial and lake marginal environments, on a grassy plain between wooded slopes and a permanent water body. Nyayanga and Sare River are new sites which have been little studied until present. Sediments at Nyayanga are thought to be ca. 2.6 Ma, whilst those at Sare River are ca. 1.77 Ma in age.

This research refines previous reconstructions of the depositional environment at Kanjera South using analyses of particle size and end member mixing. These suggest that deposition occurred mainly through low-energy, ephemeral flows in a marginal lacustrine environment, with high energy, hyper-concentrated and viscous flows occurring intermittently. In contrast, these same techniques and field investigations at Nyayanga suggest there was a more consistent energy regime here than at Kanjera South, with sediments being deposited under low-energy conditions. Sediment samples at Sare River are undergoing similar analyses. Through detailed analyses of sediments at three archaeological sites, insights into the depositional dynamics of the ca. 2 Ma palaeoenvironments inhabited by hominins have been made accessible.